RESOLUTION NO. 2012-18

A RESOLUTION OF THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, APPROVING THE PROPOSAL BY COASTAL SYSTEMS INTERNATIONAL, INC. ATTACHED AS EXHIBIT "A" RELATING TO CONSTRUCTION PROCUREMENT, A BEACH CONSTRUCTION PLAN UPDATE, CONSTRUCTION ADMINISTRATION, RESIDENT PROJECT REPRESENTATIVE SERVICES, BIOLOGICAL, PHYSICAL, AND OTHER REQUIRED MONITORING, PERMIT COMPLIANCE, AND A DEPARTMENT OF ENVIRONMENTAL PROTECTION FUNDING REQUEST FOR THE BEACH RENOURISHMENT PROJECT; AUTHORIZING THE VILLAGE MANAGER TO EXECUTE A WORK ORDER CONSISTENT WITH THE TERMS OF THE PROPOSAL; PROVIDING FOR IMPLEMENTATION; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, pursuant to a contractual agreement previously entered into between the Village of Key Biscayne (the "Village") and Coastal Systems International, Inc. (the "Engineer"), the Engineer has been retained by the Village in connection with services needed for the Village Beach Renourishment Projects; and

WHEREAS,the Engineer, pursuant to its continuing contract, has submitted the proposal attached as Exhibit "A," proposed to perform construction procurement, a beach construction plan update, construction administration, resident project representative services, biological, physical, and other required monitoring, permit compliance, and a Department of Environmental Protection funding request for the proposed Village Beach Renourishment project; (the "Proposal"); and

WHEREAS, the Village Council desires to authorize the Village Manager to execute a work authorization consistent with the Proposal; and

WHEREAS, the Village Council finds that this Resolution is in the best interest and welfare of the residents of the Village.

NOW, THEREFORE, BE IT RESOLVED BY THE VILLAGE COUNCIL OF THE VILLAGE OF KEY BISCAYNE, FLORIDA, AS FOLLOWS:

Section 1. Recitals Adopted. Each of the above stated recitals are hereby adopted, confirmed and incorporated herein.

Section 2. Proposal Approved. The Village Council hereby approves the Proposal attached as Exhibit "A" submitted by the Engineer.

Section 3. Village Manager Authorized. The Village Manager is hereby authorized to execute a work authorization with the Engineer, consistent with the Proposal attached hereto as Exhibit "A," subject to approval as to form, content, and legal sufficiency by the Village Attorney.

Section 4. Implementation. The Village Manager is hereby authorized to take any and all necessary action to implement the purposes of this Resolution and the Proposal.

Section 5. Effective Date. This Resolution shall be effective immediately upon adoption.

PASSED AND ADOPTED this 24th day of April, 2012.

MAYOR FRANKLIN H. CAPLAN

ATTEST:

CONCHITA H. ALVAREZ, MMC, VILLAGE CLERK

APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

VILLAGE ATTORNEY

COASTAL SYSTEMS INTERNATIONAL, INC.
464 South Dixie Highway • Coral Gables, Florida 33146
Tel: 305-661-3655 • Fax: 305-661-1914
www.coastalsystemsint.com

135040.02-A4

April 3, 2012

Mr. John Gilbert, Village Manager
VILLAGE OF KEY BISCAYNE
88 West McIntyre Street
Key Biscayne, Florida 33149

RE: CONSULTING ENGINEERING SERVICES FOR THE VILLAGE OF KEY BISCAYNE BEACH RENOURISHMENT PROJECT, VILLAGE OF KEY BISCAYNE, MIAMI-DADE COUNTY, FLORIDA

Dear Mr. Gilbert:

Coastal Systems International, Inc. (Coastal Systems) is pleased to present this Proposal Addendum to the Village of Key Biscayne (Village) for consulting services related to the implementation of the 2012 Beach Renourishment Project. This scope of services is required to assist the Village with construction administration and to complete the required monitoring services in accordance with the environmental permits. This monitoring includes biological and physical monitoring and the services detailed below are anticipated to be required by Miami-Dade County Permitting, Environment and Regulatory Affairs (PERA), Florida Department of Environmental Protection (DEP), and U.S. Army Corps of Engineers (Corps) permits authorizing the Key Biscayne Beach Renourishment Project (Project). The scope of services herein includes preparation of revised construction plans based on pre-construction surveys, contractor procurement assistance, construction administration, seagrass mapping, and biological assessments. Services for post-construction biological and physical monitoring will be provided including sand compaction surveys, physical surveys, and permit compliance from pre-construction through three years post-construction. Based on the performance of past beach nourishment events and previous coastal engineering studies provided to the Village, the next beach maintenance event will likely be required in approximately three years.

The following work tasks, numbered sequentially from our previous scope of services, describe the scope of work to be performed by Coastal Systems for the Village:

PART 13 – CONSTRUCTION PROCUREMENT

a. **Procurement**: Coastal Systems will evaluate existing public sector construction contracts from other municipalities and counties to evaluate and recommend "piggy-back" contract opportunities from recently bid construction projects. Due to the ongoing environmental permitting process and project time constraints, the Village can utilize other public sector contracts with similar unit prices for construction line items. Coastal Systems will review the available contracts and prepare a summary letter with documentation of an appropriate beach renourishment contract. The budget for construction will be developed and presented to the Village with recommendations. This scope of services assumes the Project will be

constructed utilizing the sand from the permitted sand source at the Ortona mine.

Deliverables Summary Letter with construction contract documentation

b. **Contract Documents**: Coastal Systems will compile construction documents for the Project to be prepared in the Engineers Joint Contract Documents Committee (EJCDC) format. These documents will consist of the following:

- General Conditions of the Contract
- Supplementary Conditions (tailored for beach construction)
- Agreement between the Village and Contractor
- Payment Application forms, work change requests, etc.
- Performance/Payment Bond forms

The documents will be compiled and reviewed with the Village attorney. Once reviewed, Coastal Systems will prepare the original contract documents and assist the Village with execution.

PART 14 – BEACH CONSTRUCTION PLAN UPDATE

Coastal Systems prepared construction plans and beach fill design templates based on beach profile data provided by Miami-Dade County PERA. This data includes profile lines at 1,000-foot intervals. After the pre-construction surveys conducted under Part 15(b) services, Coastal Systems will review the beach profile cross sections along with pre-construction seagrass surveys conducted under Part 17(a) services. Beach fill templates will be developed at 100-foot intervals and the contract volumes will be estimated. Coastal Systems will adjust the beach fill templates if required based on an updated Equilibrium Toe of Fill (ETOF) coastal engineering analysis utilizing the modified Dean Method. Revised construction plans will be "Issued for Construction" with beach fill and volume revisions.

Deliverables· Construction Plan Revisions

PART 15 – CONSTRUCTION ADMINISTRATION

a. **Construction Administration**: Coastal Systems will provide construction administration services for the truck haul beach renourishment Project. These services include the following during the estimated construction schedule of 45 days for the 31,000 c.y. Project, as applicable:

- Attend one (1) Preconstruction Meeting
- Review shop drawings and submittals
- Review sand sampling and testing (QA/QC) results to be provided by the Contractor's geotechnical engineer
- Weekly email updates to Village on Construction Progress

- Site Visits – up to twenty-one (21) over the 7-week construction period, based on three (3) site visits per week. Field Reports will be prepared with photos to document the ongoing construction.
- Responses to Requests for Information (RFI's)
- Review of truck weight tickets and summary logs to be provided by the contractor for contract payment
- Review of beach profile pre/post construction surveys
- Attend construction progress meetings, estimated at a total of three (3) meetings
- Review and approval of payment applications

b. Construction Surveying: Coastal Systems will perform pre/post construction beach profile surveys and construction staking for the Project as follows:

- Pre-construction Physical Monitoring (north and south of Project) – R-monuments R-100 to R-102 and R-108 to R-113 (total 9 profiles)
- Pre-construction – approximately 72 profiles between R 101+ 900 to R-108 along 7,000 feet of beach. Profiles to include topographic and hydrographic survey data in accordance with DEP Standards
- Post Construction – approximately 72 profiles with topographic surveying methods out to wading depth. These profiles will be coordinated with the contractor's progress of construction.
- Post Construction Physical Monitoring – same profiles as pre-construction physical monitoring
- Construction staking will be provided at 100-foot intervals to support the contractor's operation.

Deliverables: *As-Built Beach Profile Surveys in accordance with DEP Standards*
Physical Monitoring Beach Profile Survey Report for R-monuments R-100 to R-113 in accordance with DEP Standards

PART 16 – RESIDENT PROJECT REPRESENTATIVE SERVICES

Construction of the Project will continue for 45-60 days; during this time Coastal Systems will staff the Project with an on-site Resident Project Representative (RPR). The RPR will maintain contact with the Village on a daily basis and respond to concerns or questions from Village staff. RPR services are budgeted for ten hour days, five days a week. The RPR will observe the site multiple times per day and will communicate with the construction crew and Engineer of Record.

The following is an outline of services to be provided by the RPR:

a. Beach Construction Daily Observations: Fees are based on ten hour shifts each day, five days a week during sand placement activities. The RPR will observe construction operations multiple times per day and will communicate with construction crews and the Engineer of Record.

b. **Daily Reporting:** During the ten hour shift, the RPR will prepare and distribute daily RPR reports documenting Project progress and issues. Photographs will be included in the daily reports.

c. **Truck Monitoring:** The RPR will collect the truck tickets for each load of sand delivered to the Project. These tickets will be reconciled in a spreadsheet to track payment quantities (by the ton) for correlation with the estimated volumes on the beach.

d. **Staging Area Coordination**: The RPR will coordinate with the contractor and the General Contractor working at the staging area to facilitate truck access to the Project.

e. **Progress Meetings:** The RPR will participate in the weekly progress meetings.

f. **Beach Compatibility Sand Testing:** The RPR will observe the beach sand representative grab samples and the testing results to be provided by the contractor's geotechnical engineer for beach sand QA/QC.

PART 17 – BIOLOGICAL MONITORING

The PERA, DEP, and Corps permits require biological monitoring in accordance with the approved Project specific Biological Monitoring Plan (BMP). This monitoring is to identify any unanticipated adverse impacts to submerged aquatic resources that result from construction and/or equilibration of the beach renourishment Project. The following tasks provide for the monitoring required by the BMP, which includes monitoring within the immediate area of the Project influence, as well as monitoring control areas to document natural background conditions. The fees for Part 17 are inclusive of equipment rental and reimbursable expenses.

Pre-Construction monitoring is required to document the ecological baseline conditions present immediately prior to commencement of any construction activities for comparison with post-construction monitoring. Post-Construction monitoring is required to document the ecological baseline conditions present after the completion of beach construction activities for three years for comparison with the pre-construction monitoring event.

a. **Seagrass Edge Mapping:** Coastal Systems will conduct mapping of the western seagrass edge prior to commencement of construction and for three summers post-construction to identify any physical effects to the nearshore submerged aquatic resources that may have occurred as a result of construction and equilibration of the Project. Additional seagrass edge mapping will be conducted adjacent to the control transect located between R-110 and R-111.

   i. Pre-Construction
   ii. Year 1 Post-Construction
   iii. Year 2 Post-Construction
   iv. Year 3 Post-Construction

b. **Seagrass/Macroalgal Assessments:** Biologists using snorkel gear will note the seagrass species and visually estimate the density of seagrasses located at the Project site using the

Braun Blanquet technique along each transect. A one-square meter ($1m^2$) quadrat will be placed on the substrate every five (5) meters along the north side of the transect tape and seagrass density information will be collected. Braun Blanquet sampling stations will be monitored along each transect. The biologists will also note the dominant species of attached macroalgae present within the seagrass bed, substrate composition, and take representative photographs of the survey area.

i. Pre-Construction
ii. Year 1 Post-Construction
iii. Year 2 Post-Construction
iv. Year 3 Post-Construction

c. **Biological Reporting:** Comprehensive Environmental Monitoring Reports will be submitted after completion of each of the biological monitoring events described in Parts 17 (a) and 17(b) above. The Reports will detail the findings of each Biological Monitoring event and will compare the conditions observed each year to the pre-construction baseline survey to identify any adverse impacts that may be attributable to the Project. If mitigation to offset adverse impacts to submerged aquatic resources identified during Post-Construction monitoring events is required, then an addendum scope of services will be provided.

i. Pre-Construction
ii. Year 1 Post-Construction
iii. Year 2 Post-Construction
iv. Year 3 Post-Construction

PART 18 – OTHER REQUIRED MONITORING

a. **Compaction Monitoring:** Compaction monitoring is required to identify any areas along the newly constructed beach that are not conducive to nesting sea turtles. A cone penetrometer is utilized to measure sand compaction in accordance with the Terms & Conditions of the U.S. Fish & Wildlife Service's Statewide Programmatic Biological Opinion (SPBO), dated August 22, 2011, for sand placement activities in Florida. Any areas of beach not meeting compaction standards must be tilled to a depth of 36-inches prior to April 1, the commencement of sea turtle nesting season, by the Village or their subcontractor. Beach tilling is not included in this scope of services. It is assumed that the contractor will till the beach upon completion of construction.

Pursuant to the SPBO, compaction monitoring will be conducted annually for three (3) years following the completion of beach construction. Compaction sampling stations will be located at 500 feet intervals along the sand placement template. One station will be at the seaward edge of the dune/bulkhead line and one station will be midway between the dune line and the high water line. At each station, a cone penetrometer will be pushed to a depth of 6, 12, and 18 inches three times. A report will be prepared and an electronic copy of the results will be submitted to the FWS Field Office. Consultation regarding the need for tilling will be conducted under Part 20 of this agreement.

i. Year 1 Post-Construction
ii. Year 2 Post-Construction
iii. Year 3 Post-Construction

b. Sea Turtle Nesting Success Reports: Annual reports on the success of sea turtle nesting are required pursuant to the SPBO. Data collected on a daily basis by Miami-Dade County Parks, Recreation, and Open Spaces on sea turtle nesting will be used to prepare the reports required by the environmental permits on sea turtle nesting success during the two summers following Project construction. These reports will involve analyzing and distilling the County data for the Project area and reporting the results to the agencies at the end of each sea turtle nesting season. Sea Turtle Nesting Success reports must be prepared for year 1 and year 2 post construction.

Sea turtle nesting data for the Project area will be extrapolated from the County data for two (2) sea turtle nesting seasons following the completion of beach construction. The sea turtle nesting data will be tabulated into the format required by the agencies and submitted to the FWS and FWC as required.

i. Year 1 Post-Construction
ii. Year 2 Post-Construction

PART 19 – PHYSICAL MONITORING

The PERA, DEP, and Corps require beach profile surveys to be conducted to monitor the equilibration of the beach after construction. After the immediate post construction survey, the agencies require annual surveys during the summer for a period of three years, then biennial surveys until the next beach nourishment event or the expiration of the Project design life. These required surveys will be conducted and analyzed by Coastal Systems as the Engineer of Record. If beach conditions return to pre-Project conditions at any time prior to completion of surveys under this task Coastal Systems will request that future monitoring events not be required. This agency coordination will be addressed under Part 20 below.

a. Beach Profile Surveys: Beach profile surveys will be conducted annually for three (3) years after the completion of beach construction. The surveys will be conducted between R-100 and R-113, which includes the Project area. This monitoring area includes approximately 14 profiles and these profiles must be surveyed for each physical monitoring event. The beach profile surveys (topographic and hydrographic) will be conducted in accordance with "Monitoring Standards for Beach Erosion Control," as published by the Florida DEP Bureau of Beaches and Coastal Systems. The data and mapping deliverables will be distributed by Coastal Systems to the agencies.

i. Year 1 Post-Construction
ii. Year 2 Post-Construction
iii. Year 3 Post-Construction

b. **Physical Monitoring Reports:** Coastal Systems will analyze the beach profile data and prepare Engineering Reports that include the monitoring data at the events as outlined Task 19(a) above. The Reports will summarize and discuss the data, discuss performance of the beach fill Project, and identify erosion and accretion patterns within the monitored area. The Reports will also include a comparative review of Project performance to performance expectations and will identify any unanticipated adverse impacts attributable to the Project (if applicable). The appendices of the Report will include plots of survey profiles and graphical representations of volumetric and shoreline position changes for the monitoring area. The results will be analyzed for patterns, trends, or changes between the pre and post-construction surveys. Reports will be prepared and submitted to the agencies annually for three years in accordance with the permits.

i. Immediate Post-Construction
ii. Year 1 Post-Construction
iii. Year 2 Post-Construction
iv. Year 3 Post-Construction

PART 20 – PERMIT COMPLIANCE

Coastal Systems staff will attend meetings, participate in conference calls, prepare exhibits, and respond to informational inquiries made by the environmental regulatory agencies in response to permit compliance and Project performance in association with the beach renourishment Project. Coastal Systems will address agency inquiries pertaining to potential unanticipated impacts to ecological resources, nesting sea turtles, physical monitoring surveys, and other compliance related items with respect to the Project. As the greatest Project equilibration will occur within the first year post construction, it is anticipated that the level of effort required to address Project compliance related issues will decrease following Year 1 post-construction.

i. Year 1 During & Post-Construction
ii. Year 2 Post-Construction
iii. Year 3 Post-Construction

PART 21 – FUNDING APPLICATION 2013/2014 FISCAL YEAR

Coastal Systems will prepare a DEP Local Government Funding Request (LGFR) for the 2013/2014 fiscal year for the Project. The Village will provide information regarding available municipal beach management support staff and a Resolution noting support of the Project, willingness to serve as local sponsor, ability to provide the local cost share, and identification of a dedicated funding source. The Village will provide Coastal Systems with available data regarding public beach access and parking spaces, location of public restrooms in proximity to the beach, location of public lodging establishments and land use information. Coastal Systems will update the Project drawings with this information for submittal with the LGFR. Coastal Systems will compile the necessary data and submit the scope of work, schedule, contract copies and other required exhibits to the DEP Beach Management Assistance Funding Program in support of this funding request.

GENERAL

These services will be provided as an addendum to Coastal Systems' agreement with the Village dated August 1, 2006. This Addendum is subject to the original agreement terms and conditions and is valid to be executed for sixty (60) days. Fees and expenses will be invoiced each month in accordance with our existing agreement with the Village. Reimbursable expenses associated with this scope of services are included in the line item fee estimate.

Please return an executed copy of this addendum or a Notice to Proceed, which will serve as our authorization to proceed with the scope of services herein. We look forward to continuing to work with the Village through the implementation of this beach renourishment project. Should you have any questions or require additional information, please do not hesitate to contact Ms. Penny Cutt at 561-478-1004 ext. 311 or pcutt@coastalsystemsint.com or me at 305-669-8650 or tblankenship@coastalsystemsint.com.

Sincerely,
COASTAL SYSTEMS INTERNATIONAL, INC.

Timothy K. Blankenship, P.E.
Director

DATE: 5/4/12

SIGNED: _____
VILLAGE OF KEY BISCAYNE

PRINT: John C. Gilbert Village Manager
Name **Title**

TKB:PC:mr

File, TKB, CJB, LMS, PC, DM, YC, AB, Contract Book, Accounting
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TABLE 1
SUMMARY OF COSTS FOR ENGINEERING SERVICES
KEY BISCAYNE BEACH RENOURISHMENT
KEY BISCAYNE, FLORIDA

DESCRIPTION	TYPE	FEES
Part 13 Construction Procurement		
a Procurement	Lump Sum	$1,500
b Contract Documents	Lump Sum	$2,900
Subtotal		**$4,400**
Part 14 Beach Construction Plan Update		
a Beach Construction Plan Update	Lump Sum	$4,300
Subtotal.		**$4,300**
Part 15. Construction Administration		
a Construction Administration	Lump Sum	$20,400
b Construction Surveying	Lump Sum	$52,000
Subtotal.		**$72,400**
Part 16 Resident Project Representative Services		
a Resident Project Representative Services		$28,700
Subtotal.		**$28,700**
Part 17. Biological Monitoring		
a Seagrass Edge Mapping		
i Pre-Construction	Lump Sum	$3,200
ii Year 1 Post-Construction	Lump Sum	$3,200
iii Year 2 Post-Construction	Lump Sum	$3,200
iv Year 3 Post-Construction	Lump Sum	$3,200
b Seagrass/Macroalgal Assessments		
i Pre-Construction	Lump Sum	$12,200
ii Year 1 Post-Construction	Lump Sum	$12,200
iii Year 2 Post-Construction	Lump Sum	$12,200
iv Year 3 Post-Construction	Lump Sum	$12,200
c Biological Reporting		
i Pre-Construction	Lump Sum	$12,100
ii Year 1 Post-Construction	Lump Sum	$11,100
iii Year 2 Post-Construction	Lump Sum	$11,100
iv Year 3 Post-Construction	Lump Sum	$13,100
Subtotal		**$109,000**
Part 18. Other Required Monitoring		
a Compaction Monitoring		
i Year 1 Post-Construction	Lump Sum	$2,500
ii Year 2 Post-Construction	Lump Sum	$2,500
iii Year 3 Post-Construction	Lump Sum	$2,500
b Sea Turtle Nesting Success Reports		
i Year 1 Post-Construction	Lump Sum	$1,300
ii Year 2 Post-Construction	Lump Sum	$1,300
Subtotal.		**$10,100**
Part 19 Physical Monitoring		
a Beach Profile Surveys		
i Year 1 Post-Construction	Lump Sum	$12,800
ii Year 2 Post-Construction	Lump Sum	$12,800
iii Year 3 Post-Construction	Lump Sum	$12,800
b Physical Monitoring Reports		
i Immediate Post Construction	Lump Sum	$9,100
ii Year 1 Post-Construction	Lump Sum	$10,400
iii Year 2 Post-Construction	Lump Sum	$10,400
iv Year 3 Post-Construction	Lump Sum	$10,400
Subtotal:		**$78,700**
Part 20 Permit Compliance		
i Year 1 During & Post-Construction	Hourly, estimated at	$9,400
ii Year 2 Post-Construction	Hourly, estimated at	$4,900
iii Year 3 Post-Construction	Hourly, estimated at	$4,900
Subtotal:		**$19,200**
Part 21 Funding Application 2013/2014 Fiscal YearPermit Compliance		
a Funding Application	Hourly, estimated at	$4,900
Subtotal		**$4,900**
	GRAND TOTAL:	**$331,700**